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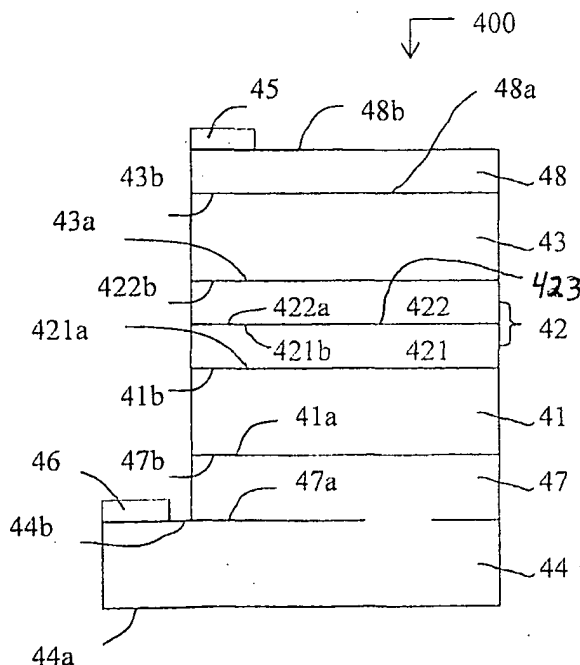
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[Continued on next page]

(54) Title: **PHOTOTRANSISTORS, METHODS OF MAKING PHOTOTRANSISTORS, AND METHODS OF DETECTING LIGHT**



(57) Abstract: A phototransistor (400) comprises an emitter (43) comprising antimony, a base (42) comprising antimony, and a collector (41) comprising antimony. Preferably, the emitter, the base and the collector each comprises at least one of AlInGaAsSb, AlGaAsSb, AlGaSb, GaSb and InGaAsSb. The base comprises an emitter-contacting portion (422b) which is in contact with a base-contacting portion (43a) of the emitter. The collector comprises a base-contacting portion (41b) which is in contact with a collector-contacting portion (421a) of the base. The phototransistor produces an internal gain upon being contacted with light within a receivable wavelength range, preferably greater than 1.7 micrometers. Also, a method of making such a phototransistor, and a method of detecting light using such a phototransistor.

WO 2005/074042 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/02085

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01L 31/06, 31/0328

US CL : 257/184,187,189, 461-465; 438/48,81,87,309

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 257/184,187,189, 461-465; 438/48,81,87,309

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- A	US 6,452,242 B1 (Razeghi) 17 September 2002 (17.09.2002), Col.1, lines 50-53, Col., lines 29-30 & Col.5, lines 10-17	1-2, 19, 21-24, 26-34, 48 & 49 3-18, 20, 25, & 35-47

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* Special categories of cited documents.	
"A" document defining the general state of the art which is not considered to be of particular relevance	"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

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Continuation of B. FIELDS SEARCHED Item 3:
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